Claims:

1. Human DNase unaccompanied by associated native glycosylation.

2. A DNA isolate encoding human DNase.

3. The isolate of claim 2 wherein the isolate is free of DNase introns.

4. The isolate of claim 2 wherein the isolate is free of genomic DNA which encodes another polypeptide from the source of the DNA.

5. The isolate of claim 2, wherein the DNA encodes a polypeptide having the amino sequence shown in figure 1.

6. A recombinant expression vector comprising DNA encoding human DNase.

7. A composition comprising a cell transformed with the recombinant expression vector of claim 6.

8. The composition of claim 7 wherein the cell is a mammalian cell.

9. A process for producing DNase which comprises transforming a host cell with nucleic acid encoding DNase, culturing the transformed cell and recovering DNase from the culture.

10. The process according to claim 9 wherein the DNase is recovered from the culture medium of the host cell.

11. The process according to claim 10 wherein the host cell is a eukaryotic cell.

12. The process of claim 9 wherein the DNase is human DNase.

13. The process of claim 12 wherein the eukaryotic cell is a human embryonic kidney cell line.

14. The process of claim 12 wherein the nucleic acid encodes a human DNase preprotein.

15. The process of claim 14 wherein the preprotein is human preDNase.

16. The process of claim 12 wherein the human DNase is secreted into the culture medium.

17. The process of claim 12 wherein the human DNase is unglycosylated.

18. A pharmaceutical preparation useful for enzymatic treatment comprising a therapeutically effective amount of human DNase and a pharmaceutically acceptable carrier.

19. The preparation of claim 18 which is sterile.

20. The preparation of claim 18 wherein the DNase is entirely free of proteases.

21. The preparation of claim 20 in the form of an aerosol.

22. The preparation of claim 18 wherein the DNase has the sequence of the mature DNase depicted in Fig. 1.

23. A polynucleotide probe containing at least about 10 bases which is capable of hybridizing under stringent conditions to the human DNase gene.

24. A conjugate of human DNase and a nonproteinaceous polymer.

25. The conjugate of claim 24 wherein the polymer is surgical tubing selected from the group of catheters and drainage conduits.

26. The conjugate of claim 24 which is water soluble.

27. The conjugate of claim 24 wherein the polymer is a polyoxyalkylene or polyalkylene glycol.

28. A method for the treatment of a patient having an accumulation of purulent material comprising administering pure DNase free of proteases to the patient in an amount therapeutically effective to reduce the visco-elasticity of the material.

29. A method for enhancing the activity of antibiotics comprising administering to a patient a therapeutically effective amount of an antibiotic and a therapeutically effective amount of DNase.

30. A method for maintaining the flow of fluid in conduits communicating with a patient's body cavity comprising contacting the interior of the conduit with DNase.

31. The method of claim 30 wherein the DNase is covalently bound to the conduit.

32. The method of claim 30 wherein a solution of the DNase is passed through the conduit into the body cavity.

33. A method for purifying pharmaceutical preparations so as to be free of contaminant DNA comprising contacting the preparation with DNase under conditions for degrading the contaminant DNA to oligonucleotides and removing the oligonucleotides and DNase from the preparation.

34. The method of claim 33 wherein the DNase is immobilized on a water insoluble support.

35. A method for the treatment of a patient having cystic fibrosis comprising administering to such patient a therapeutically effective dose of pure DNase free of proteases.